

Appendix G

Phase I Soil Dioxin Results

DATA FLAGS

In order to assist with data interpretation, data qualifier flags are used on the final reports. The most commonly used flags are:

- ND** = analyte not detected. Value is the detection limit.
- B** = analyte has been detected in the laboratory method blank as well as in an associated field sample.
- E** = indicates a concentration based on an analyte to internal standard ratio which exceeds the range of the calibration curve. Values which are outside the calibration curve are estimates only.
- I** = indicates labeled standards have been interfered with on the GC column by coeluting, interferent peaks. All quantitations relative to this standard, therefore, may be underestimated.
- J** = indicates a concentration based on an analyte to internal standard ration which is below the calibration curve. Values outside the calibration curve are estimates only.
- PR** = indicates that a GC peak is poorly resolved. The concentrations or amounts reported for such peaks are most likely overestimated.
- Q** = indicates the presence of QC ion instabilities caused by quantitative interferences.
- S** = indicates that the response of a specific PCDD/PCDF isomer has exceeded the normal dynamic range of the mass spectrometer detection system. The corresponding signal is saturated and the reported analyte concentration is a 'minimum estimate'. Results for saturated analytes are reported as greater than the upper calibration limit.
- U** = indicates that a specific isomer cannot be resolved from a large, coeluting interferent GC peak. The specific isomer is reported as not detected as a valid concentration cannot be determined. The calculated detection limit, therefore, should be considered an underestimated value.
- V** = indicates that, although the percent recovery of a labeled standard may be below a specific QC limit, the signal-to-noise ratio of the peak is greater than ten-to-one. The standard is considered reliably quantifiable. All quantitations derived from the standard are considered valid as well.
- X** = indicates that a polychlorodibenzofuran (PCDF) peak has eluted at the same time as the associated diphenyl ether (DPE) and that the DPE peak intensity is at least ten percent of the total PCDF peak intensity. Total PCDF values are flagged "X" if the total DPE contribution to the total PCDF value is greater than ten percent. All PCDF peaks that are significantly influenced by the presence of DPE peaks
- EMPC** = are either reported as "estimated maximum possible concentration" {EMPC} values without regard to the isotopic abundance ratio, or are included in the detection limit value depending on the analytical method.

PHASE I - WETLAND CONFIRMATION SOILS

DX #1	Latitude	43 23 24.13021	Longitude	83 57 57.64732			
Analyte	TEF	Undiluted		Diluted	Final		
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1		6.9				6.9
12378-PeCDD	1		24				24
123478-HxCDD	0.1		24				24
123678-HxCDD	0.1		37.5				37.5
123789-HxCDD	0.1		33.4				33.4
1234678-HpCDD	0.01		323				323
12346789-OCDD	0.0001		2800				2800
2378TCDF	0.1	E	913		741		741
12378-PeCDF	0.05		515				515
23478-PeCDF	0.5		384				384
123478-HxCDF	0.1		404				404
123678-HxCDF	0.1		97.9				97.9
234678-HxCDF	0.1		73.5				73.5
123789-HxCDF	0.1		25.3				25.3
1234678-HpCDF	0.01		1060				1060
1234789-HpCDF	0.01		53.8				53.8
12346789-OCDF	0.0001		1020				1020
Total TEQ: Non-Detects = Detection Limit				410			
Non-Detects = 1/2 d.l.				410			
Non-Detects = zero				410			

PHASE I - WETLAND CONFIRMATION SOILS

DX #2	Latitude	43 23 22.14732	Longitude	83 58 05.10501			
Analyte	TEF	Undiluted		Diluted	Final		
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1		5.1				5.1
12378-PeCDD	1		8.6				8.6
123478-HxCDD	0.1		6.2				6.2
123678-HxCDD	0.1		26.2				26.2
123789-HxCDD	0.1		14.2				14.2
1234678-HpCDD	0.01		457				457
12346789-OCDD	0.0001	E	4070		7610		7610
2378TCDF	0.1	EMPC,SE	7860		21950		21950
12378-PeCDF	0.05	E	5540		9920		9920
23478-PeCDF	0.5	E	3940		7510		7510
123478-HxCDF	0.1	E	3950		7790		7790
123678-HxCDF	0.1		707				707
234678-HxCDF	0.1		468				468
123789-HxCDF	0.1		73.3				73.3
1234678-HpCDF	0.01	E	2540		4600		4600
1234789-HpCDF	0.01		169				169
12346789-OCDF	0.0001		1780				1780
Total TEQ: Non-Detects = Detection Limit				7400			
Non-Detects = 1/2 d.l.				7400			
Non-Detects = zero				7400			

PHASE I - WETLAND CONFIRMATION SOILS

DX #3	Latitude	43 23 19.79889	Longitude	83 58 03.87874	
Analyte	TEF	Undiluted		Diluted	Final
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1		7.6		7.6
12378-PeCDD	1		19.7		19.7
123478-HxCDD	0.1		18.7		18.7
123678-HxCDD	0.1		37.5		37.5
123789-HxCDD	0.1		26.8		26.8
1234678-HpCDD	0.01		472		472
12346789-OCDD	0.0001	E	4080	6970	6970
2378TCDF	0.1	EMPC,S,E	5810	18730	18730
12378-PeCDF	0.05	E	5080	8550	8550
23478-PeCDF	0.5	E	3840	6500	6500
123478-HxCDF	0.1	E	3430	7010	7010
123678-HxCDF	0.1		641		641
234678-HxCDF	0.1		449		449
123789-HxCDF	0.1		85.9		85.9
1234678-HpCDF	0.01	E	2000	3480	3480
1234789-HpCDF	0.01		187		187
12346789-OCDF	0.0001		1710		1710
Total TEQ: Non-Detects = Detection Limit				6400	
Non-Detects = 1/2 d.l.				6400	
Non-Detects = zero				6400	

PHASE I - WETLAND CONFIRMATION SOILS

DX #4	Latitude	43 23 20.24459	Longitude	83 58 02.48230	
Analyte	TEF	Undiluted		Diluted	Final
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1		4.1		4.1
12378-PeCDD	1		9.2		9.2
123478-HxCDD	0.1		5.9		5.9
123678-HxCDD	0.1		27.2		27.2
123789-HxCDD	0.1		14.5		14.5
1234678-HpCDD	0.01		505		505
12346789-OCDD	0.0001	E	4550	7190	7190
2378TCDF	0.1	S,E	5220	10930	10930
12378-PeCDF	0.05	E	3430	5110	5110
23478-PeCDF	0.5	E	2240	3680	3680
123478-HxCDF	0.1	E	2260	3850	3850
123678-HxCDF	0.1		422		422
234678-HxCDF	0.1		267		267
123789-HxCDF	0.1		45.6		45.6
1234678-HpCDF	0.01	E	2040	2880	2880
1234789-HpCDF	0.01		132		132
12346789-OCDF	0.0001		1710		1710
Total TEQ: Non-Detects = Detection Limit				3700	
Non-Detects = 1/2 d.l.				3700	
Non-Detects = zero				3700	

PHASE I - WETLAND CONFIRMATION SOILS

DX #5 Latitude 43 23 20.65511 Longitude 83 57 59.74854

Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1			EMPC	2.1	EMPC	2.1
12378-PeCDD	1			J	3	J	3
123478-HxCDD	0.1			J	2.1	J	2.1
123678-HxCDD	0.1				7.7		7.7
123789-HxCDD	0.1				5		5
1234678-HpCDD	0.01				133		133
12346789-OCDD	0.0001				1220		1220
2378TCDF	0.1			E	933		933
12378-PeCDF	0.05				448		448
23478-PeCDF	0.5				361		361
123478-HxCDF	0.1				278		278
123678-HxCDF	0.1				55.6		55.6
234678-HxCDF	0.1				38.4		38.4
123789-HxCDF	0.1			J	5	J	5
1234678-HpCDF	0.01				454		454
1234789-HpCDF	0.01				22.1		22.1
12346789-OCDF	0.0001				387		387

Total TEQ: Non-Detects = Detection Limit 350
 Non-Detects = 1/2 d.l. 350
 Non-Detects = zero 350

PHASE I - LA DAVIDSON (NPG) east=Germania Golf Course, west=Gross farm field
LA DAV DX 1 WEST

Latitude 43 23 37.22912

Longitude 84 00 01.39642

Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1		9.4				9.4
12378-PeCDD	1		10.9				10.9
123478-HxCDD	0.1		7.7				7.7
123678-HxCDD	0.1		26.9				26.9
123789-HxCDD	0.1		20.5				20.5
1234678-HpCDD	0.01		681				681
12346789-OCDD	0.0001	E	6180		7280		7280
2378TCDF	0.1		944				944
12378-PeCDF	0.05	EMPC,X	637			EMPC,X	637
23478-PeCDF	0.5		346				346
123478-HxCDF	0.1		450				450
123678-HxCDF	0.1		85.3				85.3
234678-HxCDF	0.1		61.5				61.5
123789-HxCDF	0.1	EMPC,X	12.5			EMPC,X	12.5
1234678-HpCDF	0.01		1180				1180
1234789-HpCDF	0.01		53.7				53.7
12346789-OCDF	0.0001		1280				1280

Total TEQ: Non-Detects = Detection Limit 410
 Non-Detects = 1/2 d.l. 410
 Non-Detects = zero 410

PHASE I - LA DAVIDSON (NPG) east=Germania Golf Course, west=Gross farm field
LA DAV DX 2 WEST

Latitude 43 23 37.47302

Longitude 84 00 02.39832

Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1		8.4				8.4
12378-PeCDD	1		8.6				8.6
123478-HxCDD	0.1		6				6
123678-HxCDD	0.1		20.1				20.1
123789-HxCDD	0.1		16.1				16.1
1234678-HpCDD	0.01		511				511
12346789-OCDD	0.0001	E	4360		5660		5660
2378TCDF	0.1		352				352
12378-PeCDF	0.05	EMPC,X	259			EMPC,X	259
23478-PeCDF	0.5		135				135
123478-HxCDF	0.1		189				189
123678-HxCDF	0.1		38.4				38.4
234678-HxCDF	0.1		30.1				30.1
123789-HxCDF	0.1	EMPC,X	7.1			EMPC,X	7.1
1234678-HpCDF	0.01		705				705
1234789-HpCDF	0.01		30.5				30.5
12346789-OCDF	0.0001		851				851

Total TEQ: Non-Detects = Detection Limit 180
 Non-Detects = 1/2 d.l. 180
 Non-Detects = zero 180

PHASE I - LA DAVIDSON (NPG) east=Germania Golf Course, west=Gross farm field
LA DAV DX 3 EAST Latitude 43 23 33.60160 Longitude 83 59 42.63212

Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1	EMPC	5.7			EMPC	5.7
12378-PeCDD	1		9.4				9.4
123478-HxCDD	0.1		5.3				5.3
123678-HxCDD	0.1		39.4				39.4
123789-HxCDD	0.1		15.1				15.1
1234678-HpCDD	0.01		870				870
12346789-OCDD	0.0001	E	7620		8300		8300
2378TCDF	0.1	E	6440		6650		6650
12378-PeCDF	0.05	EMPC,X,E	3170		4100		4100
23478-PeCDF	0.5	E	2260		2700		2700
123478-HxCDF	0.1	E	2370		2230		2230
123678-HxCDF	0.1		419				419
234678-HxCDF	0.1		293				293
123789-HxCDF	0.1	EMPC,X	48.1			EMPC,X	48.1
1234678-HpCDF	0.01	E	2150		2180		2180
1234789-HpCDF	0.01		177				177
12346789-OCDF	0.0001		2130				2130

Total TEQ: Non-Detects = Detection Limit 2600
 Non-Detects = 1/2 d.l. 2600
 Non-Detects = zero 2600

PHASE I - LA DAVIDSON (NPG) east=Germania Golf Course, west=Gross farm field
LA DAV DX 4 EAST Latitude 43 23 34.00872 Longitude 83 59 44.10444

Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1		10.7				10.7
12378-PeCDD	1		17.2				17.2
123478-HxCDD	0.1		12.9				12.9
123678-HxCDD	0.1		58				58
123789-HxCDD	0.1		31.1				31.1
1234678-HpCDD	0.01		1130				1130
12346789-OCDD	0.0001	E	10500		9530		9530
2378TCDF	0.1	S,E	5920		6780		6780
12378-PeCDF	0.05	EMPC,S,X,E	3650		3660		3660
23478-PeCDF	0.5	E	2530		2550		2550
123478-HxCDF	0.1	E	2720		2110		2110
123678-HxCDF	0.1		485				485
234678-HxCDF	0.1		352				352
123789-HxCDF	0.1	EMPC,X	54				54
1234678-HpCDF	0.01	E	3870		3260		3260
1234789-HpCDF	0.01		217				217
12346789-OCDF	0.0001		3190				3190

Total TEQ: Non-Detects = Detection Limit 2500
 Non-Detects = 1/2 d.l. 2500
 Non-Detects = zero 2500

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FIELD SOILS

GP 1-6		Latitude	43 23 32.47347	Longitude		84 00 21.76851		
Analyte	TEF	Undiluted		Diluted		Final		
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	
2378-TCDD	1					EMPC,B	1.3	
12378-PeCDD	1					J	0.83	
123478-HxCDD	0.1					J	0.78	
123678-HxCDD	0.1					EMPC,J,B	3.8	
123789-HxCDD	0.1					J	2.3	
1234678-HpCDD	0.01						84	
12346789-OCDD	0.0001						735	
2378TCDF	0.1						104	
12378-PeCDF	0.05						47.8	
23478-PeCDF	0.5						31	
123478-HxCDF	0.1						40.1	
123678-HxCDF	0.1						9	
234678-HxCDF	0.1						6.4	
123789-HxCDF	0.1					J	1.5	
1234678-HpCDF	0.01						112	
1234789-HpCDF	0.01					EMPC	5.2	
12346789-OCDF	0.0001						170	
Total TEQ: Non-Detects = Detection Limit				39				
Non-Detects = 1/2 d.l.				39				
Non-Detects = zero				39				

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FIELD SOILS

GP 1-12		Latitude	43 23 32.47347	Longitude		84 00 21.76851		
Analyte	TEF	Undiluted		Diluted		Final		
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	
2378-TCDD	1					B	0.76	
12378-PeCDD	1					J	0.9	
123478-HxCDD	0.1					J	0.97	
123678-HxCDD	0.1					B	4	
123789-HxCDD	0.1					J	2.1	
1234678-HpCDD	0.01						71.5	
12346789-OCDD	0.0001						677	
2378TCDF	0.1						163	
12378-PeCDF	0.05						65.4	
23478-PeCDF	0.5						51	
123478-HxCDF	0.1						59.3	
123678-HxCDF	0.1						12.6	
234678-HxCDF	0.1						8.5	
123789-HxCDF	0.1					J	1.6	
1234678-HpCDF	0.01						151	
1234789-HpCDF	0.01						8	
12346789-OCDF	0.0001						159	
Total TEQ: Non-Detects = Detection Limit				58				
Non-Detects = 1/2 d.l.				58				
Non-Detects = zero				58				

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FIELD SOILS

GP 2-6

Latitude 43 23 33.20442

Longitude 84 00 22.23185

Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1	B	2.9			B	2.9
12378-PeCDD	1	J	1.8			J	1.8
123478-HxCDD	0.1	EMPC,J	1.4			EMPC,J	1.4
123678-HxCDD	0.1		11.1				11.1
123789-HxCDD	0.1	J	4.9			J	4.9
1234678-HpCDD	0.01		267				267
12346789-OCDD	0.0001		2430				2430
2378TCDF	0.1		397				397
12378-PeCDF	0.05		184				184
23478-PeCDF	0.5		121				121
123478-HxCDF	0.1		164				164
123678-HxCDF	0.1		31				31
234678-HxCDF	0.1		19.5				19.5
123789-HxCDF	0.1	J	3.2			J	3.2
1234678-HpCDF	0.01		348				348
1234789-HpCDF	0.01		19.1				19.1
12346789-OCDF	0.0001		684				684

Total TEQ: Non-Detects = Detection Limit 140
 Non-Detects = 1/2 d.l. 140
 Non-Detects = zero 140

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FIELD SOILS

GP 2-12

Latitude 43 23 33.20442

Longitude 84 00 22.23185

Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1	B	4.3			B	4.3
12378-PeCDD	1		3.4				3.4
123478-HxCDD	0.1	J	2.7			J	2.7
123678-HxCDD	0.1		19.2				19.2
123789-HxCDD	0.1		8.3				8.3
1234678-HpCDD	0.01		328				328
12346789-OCDD	0.0001	E	2630		2800		2800
2378TCDF	0.1	E	1240		1130		1130
12378-PeCDF	0.05		346				346
23478-PeCDF	0.5		331				331
123478-HxCDF	0.1		274				274
123678-HxCDF	0.1		57.8				57.8
234678-HxCDF	0.1		44.1				44.1
123789-HxCDF	0.1		8.1				8.1
1234678-HpCDF	0.01		588				588
1234789-HpCDF	0.01		29.4				29.4
12346789-OCDF	0.0001		612				612

Total TEQ: Non-Detects = Detection Limit 350
 Non-Detects = 1/2 d.l. 350
 Non-Detects = zero 350

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FIELD SOILS

GP 3-6		Latitude	43 23 32.55589	Longitude		84 00 26.30206		
Analyte	TEF	Undiluted		Diluted		Final		
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	
2378-TCDD	1					B	0.92	
12378-PeCDD	1					EMPC,J	0.82	
123478-HxCDD	0.1					ND	0.3	
123678-HxCDD	0.1					EMPC,J,B	2.9	
123789-HxCDD	0.1					J	1.7	
1234678-HpCDD	0.01							77.1
12346789-OCDD	0.0001							707
2378TCDF	0.1							175
12378-PeCDF	0.05							70.2
23478-PeCDF	0.5							50.9
123478-HxCDF	0.1							59.7
123678-HxCDF	0.1							12.2
234678-HxCDF	0.1							8.6
123789-HxCDF	0.1					EMPC,J	1.4	
1234678-HpCDF	0.01							122
1234789-HpCDF	0.01							7.7
12346789-OCDF	0.0001							138
Total TEQ: Non-Detects = Detection Limit				59				
Non-Detects = 1/2 d.l.				59				
Non-Detects = zero				59				

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FIELD SOILS

GP 3-12		Latitude	43 23 32.55589	Longitude		84 00 26.30206			
Analyte	TEF	Undiluted		Diluted		Final			
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)		
2378-TCDD	1					B	1.4		
12378-PeCDD	1					J	1.2		
123478-HxCDD	0.1					J	0.88		
123678-HxCDD	0.1					J,B	4.2		
123789-HxCDD	0.1					J	2.3		
1234678-HpCDD	0.01							79.3	
12346789-OCDD	0.0001							741	
2378TCDF	0.1							159	
12378-PeCDF	0.05							67.8	
23478-PeCDF	0.5							46.6	
123478-HxCDF	0.1							58.7	
123678-HxCDF	0.1							13.1	
234678-HxCDF	0.1							7.9	
123789-HxCDF	0.1					J	1.9		
1234678-HpCDF	0.01							169	
1234789-HpCDF	0.01							8.1	
12346789-OCDF	0.0001							173	
Total TEQ: Non-Detects = Detection Limit				57					
Non-Detects = 1/2 d.l.				57					
Non-Detects = zero				57					

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FIELD SOILS

GP 4-6		Latitude	43 23 32.68348	Longitude		84 00 27.62213		
Analyte	TEF	Undiluted		Diluted		Final		
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	
2378-TCDD	1					J,B	0.47	
12378-PeCDD	1					EMPC,J	0.51	
123478-HxCDD	0.1					J	0.48	
123678-HxCDD	0.1					J,B	2.1	
123789-HxCDD	0.1					J	1.3	
1234678-HpCDD	0.01					B	32.8	
12346789-OCDD	0.0001					B	301	
2378TCDF	0.1						95.8	
12378-PeCDF	0.05						44.9	
23478-PeCDF	0.5						30.1	
123478-HxCDF	0.1						35.5	
123678-HxCDF	0.1						9	
234678-HxCDF	0.1						5.4	
123789-HxCDF	0.1					J	1.2	
1234678-HpCDF	0.01						65.8	
1234789-HpCDF	0.01						3.9	
12346789-OCDF	0.0001						69.7	
Total TEQ: Non-Detects = Detection Limit				34				
Non-Detects = 1/2 d.l.				34				
Non-Detects = zero				34				

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FIELD SOILS

GP 4-12		Latitude	43 23 32.68348	Longitude		84 00 27.62213		
Analyte	TEF	Undiluted		Diluted		Final		
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	
2378-TCDD	1	B	1.3			B	1.3	
12378-PeCDD	1	J	2.4			J	2.4	
123478-HxCDD	0.1	J	2			J	2	
123678-HxCDD	0.1	B	5.1			B	5.1	
123789-HxCDD	0.1	J	3.4			J	3.4	
1234678-HpCDD	0.01		54.9				54.9	
12346789-OCDD	0.0001		532				532	
2378TCDF	0.1		579				579	
12378-PeCDF	0.05		174				174	
23478-PeCDF	0.5		159				159	
123478-HxCDF	0.1		143				143	
123678-HxCDF	0.1		31				31	
234678-HxCDF	0.1		18.8				18.8	
123789-HxCDF	0.1		5.2				5.2	
1234678-HpCDF	0.01		180				180	
1234789-HpCDF	0.01		10.8				10.8	
12346789-OCDF	0.0001		139				139	
Total TEQ: Non-Detects = Detection Limit				170				
Non-Detects = 1/2 d.l.				170				
Non-Detects = zero				170				

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FIELD SOILS

GP 5-6		Latitude	43 23 32.61969	Longitude		84 00 24.55440		
Analyte	TEF	Undiluted			Diluted		Final	
		Flags	Concentration pg/g (ppt)		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1	B	5.9				B	5.9
12378-PeCDD	1	J	1				J	1
123478-HxCDD	0.1	EMPC,J	1.1				EMPC,J	1.1
123678-HxCDD	0.1		13.6					13.6
123789-HxCDD	0.1		10					10
1234678-HpCDD	0.01		162					162
12346789-OCDD	0.0001		849					849
2378TCDF	0.1		380					380
12378-PeCDF	0.05		183					183
23478-PeCDF	0.5		121					121
123478-HxCDF	0.1		141					141
123678-HxCDF	0.1		28.6					28.6
234678-HxCDF	0.1		18.6					18.6
123789-HxCDF	0.1	J	3.5				J	3.5
1234678-HpCDF	0.01		167					167
1234789-HpCDF	0.01		17.9					17.9
12346789-OCDF	0.0001		257					257
Total TEQ: Non-Detects = Detection Limit				140				
Non-Detects = 1/2 d.l.				140				
Non-Detects = zero				140				

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FIELD SOILS

GP 5-12		Latitude	43 23 32.61969	Longitude		84 00 24.55440		
Analyte	TEF	Undiluted			Diluted		Final	
		Flags	Concentration pg/g (ppt)		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1	B	5.5				B	5.5
12378-PeCDD	1		3.3					3.3
123478-HxCDD	0.1	J	3				J	3
123678-HxCDD	0.1		21.4					21.4
123789-HxCDD	0.1		8.7					8.7
1234678-HpCDD	0.01		400					400
12346789-OCDD	0.0001	E	3010		3500			3500
2378TCDF	0.1	E	2810		2920			2920
12378-PeCDF	0.05	EMPC,S,E	1530		2060			2060
23478-PeCDF	0.5		941					941
123478-HxCDF	0.1		1240					1240
123678-HxCDF	0.1		246					246
234678-HxCDF	0.1		128					128
123789-HxCDF	0.1		21					21
1234678-HpCDF	0.01		598					598
1234789-HpCDF	0.01		65.7					65.7
12346789-OCDF	0.0001		800					800
Total TEQ: Non-Detects = Detection Limit				1100				
Non-Detects = 1/2 d.l.				1100				
Non-Detects = zero				1100				

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FOREST SOILS

ISS 1-3		Latitude	43 23 32.93351	Longitude	84 00 16.40952		
Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1		2.8				2.8
12378-PeCDD	1	J	4.7			J	4.7
123478-HxCDD	0.1	J	3			J	3
123678-HxCDD	0.1		12.1				12.1
123789-HxCDD	0.1		7.2				7.2
1234678-HpCDD	0.01		235				235
12346789-OCDD	0.0001		1830				1830
2378TCDF	0.1	E	1240		790		790
12378-PeCDF	0.05		524				524
23478-PeCDF	0.5		424				424
123478-HxCDF	0.1		377				377
123678-HxCDF	0.1		85.6				85.6
234678-HxCDF	0.1		52.1				52.1
123789-HxCDF	0.1		8.8				8.8
1234678-HpCDF	0.01		413				413
1234789-HpCDF	0.01		33.9				33.9
12346789-OCDF	0.0001		448				448
Total TEQ: Non-Detects = Detection Limit				390			
Non-Detects = 1/2 d.l.				390			
Non-Detects = zero				390			

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FOREST SOILS

ISS 1-6		Latitude	43 23 32.93351	Longitude	84 00 16.40952		
Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1	EMPC,J	0.76			EMPC,J	0.76
12378-PeCDD	1	J	1.2			J	1.2
123478-HxCDD	0.1	EMPC,J	0.71			EMPC,J	0.71
123678-HxCDD	0.1	J	2.2			J	2.2
123789-HxCDD	0.1	J	2.2			J	2.2
1234678-HpCDD	0.01		35.2				35.2
12346789-OCDD	0.0001		277				277
2378TCDF	0.1	E	2210		1540		1540
12378-PeCDF	0.05		762				762
23478-PeCDF	0.5		640				640
123478-HxCDF	0.1		533				533
123678-HxCDF	0.1		111				111
234678-HxCDF	0.1		74.3				74.3
123789-HxCDF	0.1		12.7				12.7
1234678-HpCDF	0.01		146				146
1234789-HpCDF	0.01		29.8				29.8
12346789-OCDF	0.0001		85.5				85.5
Total TEQ: Non-Detects = Detection Limit				590			
Non-Detects = 1/2 d.l.				590			
Non-Detects = zero				590			

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FOREST SOILS

ISS 1-12		Latitude	43 23 32.93351	Longitude	84 00 16.40952		
Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1	EMPC,J	0.23			EMPC,J	0.23
12378-PeCDD	1	ND	0.2			ND	0.2
123478-HxCDD	0.1	ND	0.2			ND	0.2
123678-HxCDD	0.1	ND	0.2			ND	0.2
123789-HxCDD	0.1	ND	0.2			ND	0.2
1234678-HpCDD	0.01		6.8				6.8
12346789-OCDD	0.0001		52.4				52.4
2378TCDF	0.1		177				177
12378-PeCDF	0.05		68.7				68.7
23478-PeCDF	0.5		57.1				57.1
123478-HxCDF	0.1		52.1				52.1
123678-HxCDF	0.1		13				13
234678-HxCDF	0.1		8.1				8.1
123789-HxCDF	0.1	J	1.2			J	1.2
1234678-HpCDF	0.01		19.8				19.8
1234789-HpCDF	0.01	J	4.2			J	4.2
12346789-OCDF	0.0001		18.4				18.4
Total TEQ:		Non-Detects = Detection Limit	58				
		Non-Detects = 1/2 d.l.	58				
		Non-Detects = zero	58				

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FOREST SOILS

ISS 2-3		Latitude	43 23 32.60616	Longitude	84 00 15.47423		
Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1		5.9				5.9
12378-PeCDD	1		8				8
123478-HxCDD	0.1		4.9				4.9
123678-HxCDD	0.1		23.2				23.2
123789-HxCDD	0.1		12.2				12.2
1234678-HpCDD	0.01		504				504
12346789-OCDD	0.0001	E	4460		4400		4400
2378TCDF	0.1	E	2900		2370		2370
12378-PeCDF	0.05		835				835
23478-PeCDF	0.5		743				743
123478-HxCDF	0.1		562				562
123678-HxCDF	0.1		113				113
234678-HxCDF	0.1		89.9				89.9
123789-HxCDF	0.1		13.7				13.7
1234678-HpCDF	0.01		1130				1130
1234789-HpCDF	0.01		53.9				53.9
12346789-OCDF	0.0001		1090				1090
Total TEQ:		Non-Detects = Detection Limit	760				
		Non-Detects = 1/2 d.l.	760				
		Non-Detects = zero	760				

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FOREST SOILS

I SS 2-6

Latitude 43 23 32.60616

Longitude 84 00 15.47423

Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1		3.7				3.7
12378-PeCDD	1		7.4				7.4
123478-HxCDD	0.1	J	4.1			J	4.1
123678-HxCDD	0.1		19.8				19.8
123789-HxCDD	0.1		12.7				12.7
1234678-HpCDD	0.01		421				421
12346789-OCDD	0.0001		3680				3680
2378TCDF	0.1	E	1380		938		938
12378-PeCDF	0.05		566				566
23478-PeCDF	0.5		422				422
123478-HxCDF	0.1		429				429
123678-HxCDF	0.1		91.2				91.2
234678-HxCDF	0.1		67.7				67.7
123789-HxCDF	0.1		12.9				12.9
1234678-HpCDF	0.01		1080				1080
1234789-HpCDF	0.01		48.4				48.4
12346789-OCDF	0.0001		968				968

Total TEQ: Non-Detects = Detection Limit 420
 Non-Detects = 1/2 d.l. 420
 Non-Detects = zero 420

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FOREST SOILS

I SS 2-12

Latitude 43 23 32.60616

Longitude 84 00 15.47423

Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1	EMPC,J	0.43			EMPC,J	0.43
12378-PeCDD	1	J	0.76			J	0.76
123478-HxCDD	0.1	ND	0.3			ND	0.3
123678-HxCDD	0.1	J	1.4			J	1.4
123789-HxCDD	0.1	J	1.1			J	1.1
1234678-HpCDD	0.01		28.9				28.9
12346789-OCDD	0.0001		257				257
2378TCDF	0.1		983				983
12378-PeCDF	0.05		410				410
23478-PeCDF	0.5		308				308
123478-HxCDF	0.1		282				282
123678-HxCDF	0.1		54.2				54.2
234678-HxCDF	0.1		35.7				35.7
123789-HxCDF	0.1		6.2				6.2
1234678-HpCDF	0.01		106				106
1234789-HpCDF	0.01		17.5				17.5
12346789-OCDF	0.0001		76.1				76.1

Total TEQ: Non-Detects = Detection Limit 310
 Non-Detects = 1/2 d.l. 310
 Non-Detects = zero 310

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FOREST SOILS

ISS 5-3

Latitude 43 23 32.67094

Longitude 84 00 14.80497

Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1		7.3				7.3
12378-PeCDD	1		8.1				8.1
123478-HxCDD	0.1	J	4.8			J	4.8
123678-HxCDD	0.1		31.5				31.5
123789-HxCDD	0.1		13.4				13.4
1234678-HpCDD	0.01		815				815
12346789-OCDD	0.0001	E	6980		6240		6240
2378TCDF	0.1	E	1290		805		805
12378-PeCDF	0.05		514				514
23478-PeCDF	0.5		383				383
123478-HxCDF	0.1		363				363
123678-HxCDF	0.1		78.4				78.4
234678-HxCDF	0.1		59.9				59.9
123789-HxCDF	0.1		12.2				12.2
1234678-HpCDF	0.01		971				971
1234789-HpCDF	0.01		56.3				56.3
12346789-OCDF	0.0001		1540				1540

Total TEQ: Non-Detects = Detection Limit 390
 Non-Detects = 1/2 d.l. 390
 Non-Detects = zero 390

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FOREST SOILS

ISS 5-6

Latitude 43 23 32.67094

Longitude 84 00 14.80497

Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1		5.1				5.1
12378-PeCDD	1		9.1				9.1
123478-HxCDD	0.1		6.5				6.5
123678-HxCDD	0.1		26.1				26.1
123789-HxCDD	0.1		15.6				15.6
1234678-HpCDD	0.01		460				460
12346789-OCDD	0.0001	E	4010		3330		3330
2378TCDF	0.1	E	1620		1140		1140
12378-PeCDF	0.05		726				726
23478-PeCDF	0.5		549				549
123478-HxCDF	0.1		533				533
123678-HxCDF	0.1		119				119
234678-HxCDF	0.1		91.2				91.2
123789-HxCDF	0.1		14.3				14.3
1234678-HpCDF	0.01		1280				1280
1234789-HpCDF	0.01		64.8				64.8
12346789-OCDF	0.0001		1040				1040

Total TEQ: Non-Detects = Detection Limit 540
 Non-Detects = 1/2 d.l. 540
 Non-Detects = zero 540

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FOREST SOILS

I SS 5-12

Latitude 43 23 32.67094

Longitude 84 00 14.80497

Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1	EMPC,J	0.81			EMPC,J	0.81
12378-PeCDD	1	J	2.7			J	2.7
123478-HxCDD	0.1	J	1.7			J	1.7
123678-HxCDD	0.1		6.2				6.2
123789-HxCDD	0.1	J	4.2			J	4.2
1234678-HpCDD	0.01		92.4				92.4
12346789-OCDD	0.0001		845				845
2378TCDF	0.1		793				793
12378-PeCDF	0.05		352				352
23478-PeCDF	0.5		264				264
123478-HxCDF	0.1		234				234
123678-HxCDF	0.1		54				54
234678-HxCDF	0.1		44.1				44.1
123789-HxCDF	0.1		7.6				7.6
1234678-HpCDF	0.01		368				368
1234789-HpCDF	0.01		23.3				23.3
12346789-OCDF	0.0001		274				274

Total TEQ: Non-Detects = Detection Limit 270
 Non-Detects = 1/2 d.l. 270
 Non-Detects = zero 270

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FOREST SOILS

I SS 6-3

Latitude 43 23 32.38141

Longitude 84 00 15.05328

Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1		6.3				6.3
12378-PeCDD	1		7.4				7.4
123478-HxCDD	0.1	J	4.7			J	4.7
123678-HxCDD	0.1		18.5				18.5
123789-HxCDD	0.1		11.3				11.3
1234678-HpCDD	0.01		385				385
12346789-OCDD	0.0001	E	4130		3660		3660
2378TCDF	0.1	E	14860		1420		1420
12378-PeCDF	0.05	EMPC,S,E	2310		675		675
23478-PeCDF	0.5	EMPC,S,E	2250		478		478
123478-HxCDF	0.1	E	2410		413		413
123678-HxCDF	0.1		450				450
234678-HxCDF	0.1		405				405
123789-HxCDF	0.1		41.4				41.4
1234678-HpCDF	0.01		1250				1250
1234789-HpCDF	0.01		107				107
12346789-OCDF	0.0001		845				845

Total TEQ: Non-Detects = Detection Limit 580
 Non-Detects = 1/2 d.l. 580
 Non-Detects = zero 580

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FOREST SOILS

I SS 6-6

Latitude 43 23 32.38141

Longitude 84 00 15.05328

Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1		3.4				3.4
12378-PeCDD	1		6.8				6.8
123478-HxCDD	0.1	J	4.4			J	4.4
123678-HxCDD	0.1		17.4				17.4
123789-HxCDD	0.1		11.8				11.8
1234678-HpCDD	0.01		323				323
12346789-OCDD	0.0001		3130				3130
2378TCDF	0.1	E	1870		1410		1410
12378-PeCDF	0.05		702				702
23478-PeCDF	0.5		543				543
123478-HxCDF	0.1		549				549
123678-HxCDF	0.1		116				116
234678-HxCDF	0.1		85.1				85.1
123789-HxCDF	0.1	Q	13.5			Q	13.5
1234678-HpCDF	0.01		993				993
1234789-HpCDF	0.01		56.2				56.2
12346789-OCDF	0.0001		784				784

Total TEQ: Non-Detects = Detection Limit 550
 Non-Detects = 1/2 d.l. 550
 Non-Detects = zero 550

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FOREST SOILS

I SS 6-12

Latitude 43 23 32.38141

Longitude 84 00 15.05328

Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1	ND	0.7			ND	0.7
12378-PeCDD	1	J	1			J	1
123478-HxCDD	0.1	ND	0.7			ND	0.7
123678-HxCDD	0.1	J	1.3			J	1.3
123789-HxCDD	0.1	J	0.92			J	0.92
1234678-HpCDD	0.01		25.5				25.5
12346789-OCDD	0.0001		234				234
2378TCDF	0.1		507				507
12378-PeCDF	0.05		106				106
23478-PeCDF	0.5		113				113
123478-HxCDF	0.1		74.9				74.9
123678-HxCDF	0.1		15.7				15.7
234678-HxCDF	0.1		10.9				10.9
123789-HxCDF	0.1	J	1.3			J	1.3
1234678-HpCDF	0.01		84.2				84.2
1234789-HpCDF	0.01		5.9				5.9
12346789-OCDF	0.0001		67.6				67.6

Total TEQ: Non-Detects = Detection Limit 130
 Non-Detects = 1/2 d.l. 130
 Non-Detects = zero 130

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FOREST SOILS

I SS 7-3

Latitude 43 23 32.85392

Longitude 84 00 15.68027

Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1		5.7				5.7
12378-PeCDD	1	EMPC	6.1			EMPC	6.1
123478-HxCDD	0.1		4.2				4.2
123678-HxCDD	0.1		19.8				19.8
123789-HxCDD	0.1		9.2				9.2
1234678-HpCDD	0.01		519				519
12346789-OCDD	0.0001	E	4110		2730		2730
2378TCDF	0.1	E	1290		915		915
12378-PeCDF	0.05		671				671
23478-PeCDF	0.5		458				458
123478-HxCDF	0.1		452				452
123678-HxCDF	0.1		97.7				97.7
234678-HxCDF	0.1		66.5				66.5
123789-HxCDF	0.1	EMPC,X	9.6			EMPC,X	9.6
1234678-HpCDF	0.01		827				827
1234789-HpCDF	0.01		43.2				43.2
12346789-OCDF	0.0001		1180				1180

Total TEQ: Non-Detects = Detection Limit 450
 Non-Detects = 1/2 d.l. 450
 Non-Detects = zero 450

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FOREST SOILS

I SS 7-6

Latitude 43 23 32.85392

Longitude 84 00 15.68027

Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1		4.5				4.5
12378-PeCDD	1		12.5				12.5
123478-HxCDD	0.1		8.6				8.6
123678-HxCDD	0.1		58.6				58.6
123789-HxCDD	0.1		23.7				23.7
1234678-HpCDD	0.01		732				732
12346789-OCDD	0.0001	E	4430		3280		3280
2378TCDF	0.1	E	1910		1400		1400
12378-PeCDF	0.05		992				992
23478-PeCDF	0.5		678				678
123478-HxCDF	0.1		657				657
123678-HxCDF	0.1		139				139
234678-HxCDF	0.1		96.9				96.9
123789-HxCDF	0.1	EMPC,X	20.8			EMPC,X	20.8
1234678-HpCDF	0.01		1080				1080
1234789-HpCDF	0.01		68.6				68.6
12346789-OCDF	0.0001		1500				1500

Total TEQ: Non-Detects = Detection Limit 670
 Non-Detects = 1/2 d.l. 670
 Non-Detects = zero 670

PHASE I - SHIAWASSEE WILDLIFE REFUGE - FOREST SOILS

I SS 7-12

Latitude 43 23 32.85392

Longitude 84 00 15.68027

Analyte	TEF	Undiluted		Diluted		Final	
		Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)	Flags	Concentration pg/g (ppt)
2378-TCDD	1	ND	0.3			ND	0.3
12378-PeCDD	1	EMPC,J	0.68			EMPC,J	0.68
123478-HxCDD	0.1	J	1			J	1
123678-HxCDD	0.1	ND	0.3			ND	0.3
123789-HxCDD	0.1	ND	0.2			ND	0.2
1234678-HpCDD	0.01		20.4				20.4
12346789-OCDD	0.0001		145				145
2378TCDF	0.1		189				189
12378-PeCDF	0.05		94.7				94.7
23478-PeCDF	0.5		67.2				67.2
123478-HxCDF	0.1		67.2				67.2
123678-HxCDF	0.1		13.8				13.8
234678-HxCDF	0.1		10.3				10.3
123789-HxCDF	0.1	ND	0.2			ND	0.2
1234678-HpCDF	0.01		39.3				39.3
1234789-HpCDF	0.01	J	4.9			J	4.9
12346789-OCDF	0.0001		42.9				42.9

Total TEQ: Non-Detects = Detection Limit 68
 Non-Detects = 1/2 d.l. 68
 Non-Detects = zero 68